

Coefficient of linkage in allotetraploid, $B = .782 + .036$
 Coefficient of linkage in autotetraploid, $B = .419 + .110$
 Coefficient of preferential segregation in allotetraploid for $gl_6 = .333$
 Coefficient of preferential segregation in allotetraploid for $lg_2 = .496$

These data are in agreement with the range of results reported for other segments in previous work with these types of polyploids (Maize News Letter 34 : 56-59).

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4. Further studies of trivalent frequencies in the interspecific triploid hybrid of perennial teosinte x annual teosinte.

A year ago (Maize News Letter 36: 4-5) it was reported that the frequency of trivalents in the triploid hybrid between perennial and annual teosinte was only about 0.36. This seemed surprising since this indicated less homology between the chromosomes of the two teosinte species than between the chromosomes of maize and perennial teosinte, where the trivalent frequency at diakinesis was about 0.65.

Since the first value was taken from the study of only one plant, two additional plants of $4n$ teosinte x $2n$ annual teosinte were studied. In one, the trivalent frequency among 1000 sets of homologues at diakinesis was $0.269 + .1210$. In the other, the trivalent frequency among 300 sets of homologues was $0.397 + .1795$. These additional data reconfirm the results reported a year ago. However, when univalents at MI-AI in the second plant were scored, in 200 cells, an average of $8.89 + .0723$ was found. Hence it appears that over 1/2 of the diakinesis figures scored as trivalents were actually bivalent-plus-associated-univalent configurations. This indicates that caution must be used in interpreting diakinesis associations in this triploid. It seems likely that in the maize-teosinte triploids studied last year, many diakinesis figures scored as trivalents were also bivalent-plus-associated-univalent configurations.

The simplest interpretation of these results is that there is a high degree of preferential pairing and segregation in the teosinte inter-specific triploid, perhaps even more than in the teosinte-maize inter-specific triploid. However, since there are no genetic markers to follow in the teosinte triploid hybrid, it is still only a supposition that the preference for pairing is perennial teosinte chromosome with perennial teosinte chromosome. A clarification of this point could be made by inserting markers into annual teosinte from maize, and then determining the degree of genetic preferential segregation in the teosinte triploid.

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